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#### TITLE

Comparison between radiofrequency ablation and transarterial chemoembolization for patients with hepatocellular carcinoma bridging to living donor liver transplantation

#### BACKGROUND

Extended wait times prior to liver transplantation in patients with hepatocellular carcinoma (HCC) may lead to disease progression and potentially result in transplant criteria ineligibility. Locoregional therapies (LRT) are often performed as bridging therapy to help ensure that patients remain qualified. The type of LRT administered is generally chosen based on tumor burden and technical feasibility, namely patients with smaller tumor sizes, without ascites may undergo radiofrequency ablation (RFA), while those with larger or multiple tumors and with preserved liver functions may receive transarterial chemoembolization (TACE). We aim to compare the overall and recurrence-free survival between patients who received LRT bridging to living donor liver transplantation and those who did not, as well as patients who received RFA versus TACE as bridging therapy.

#### METHODS

Patients with HCC who received a living donor liver transplantation between March 2011 to December 2021 at National Taiwan University Hospital were retrospectively analyzed (n = 105). Transplant wait list time was determined from the date of pre-transplantation evaluation to the date of transplantation. Overall survival was calculated from the date of transplantation to the date of death or final follow-up, while recurrence-free survival was determined to the date of recurrence, death, or final follow-up.

#### RESULT

A total of 95 patients were identified within the UCSF criteria and eligible for liver transplantation. Among them, 60 patients did not receive any form of LRT, 34 patients underwent either RFA or TACE or both, and one patient received radioembolization one year before living donor liver transplantation. The mean waitlist time for the LRT group was 8.3 months and 5.1 months for the non-LRT group; there was no significant difference between the two ( $p = 0.0859$ ). There was also no significant difference in overall ( $p = 7$ ) or recurrence-free survival ( $p = 0.8067$ ) between these two groups. Of the LRT group, 15 patients received solely RFA while another 15 patients received solely TACE. There was no significant difference in wait time for the RFA group (10.8 months) as compared to the TACE group (6.6 months). There was also no significant difference in overall ( $p = 0.6710$ ) and recurrence-free survival ( $p = 0.6570$ ) between the groups receiving either RFA or TACE.

#### CONCLUSIONS

This retrospective analysis reveals comparable overall and recurrence-free survival rates in patients regardless of having received locoregional therapy prior to liver transplantation. The necessity of bridging therapy should be evaluated based on the accessibility of living liver donors. If deemed necessary, RFA and TACE as locoregional treatments are equally effective options.

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